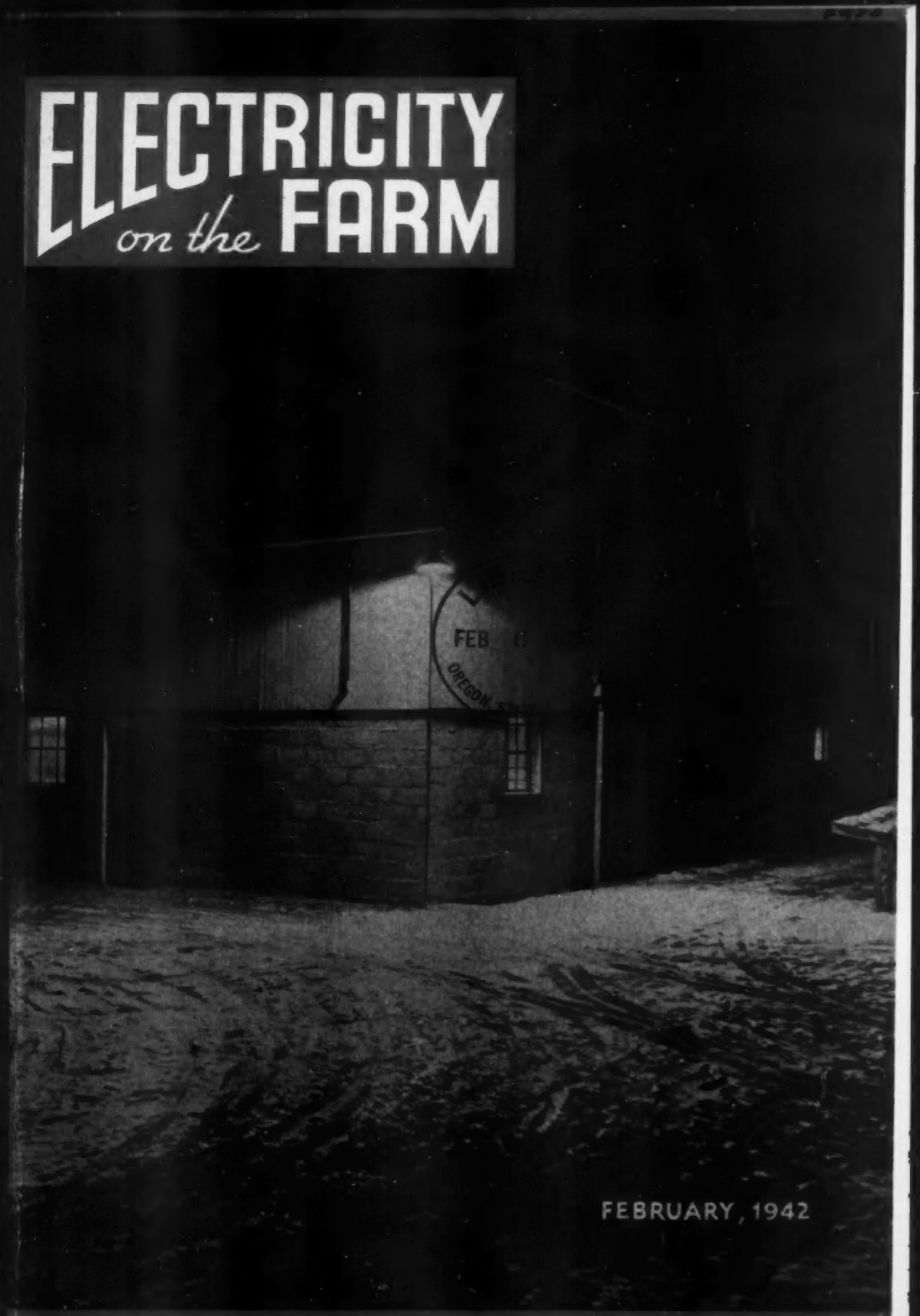
ELECTRICITY on the FARM



FEB 6
OREGON

FEBRUARY, 1942

THE NATIONAL MAGAZINE OF RURAL ELECTRIFICATION

HOW G-E LAMPS AID SEEING, HEALTH AND GROWTH!

GENERAL Electric makes lamps that can help every farmer do a better job, in less time, and with less waste of energy.

In the farm home, better lighting means eyesight protection. Today's new lighting fixtures, lamps, and adaptor equipment make modern lighting easy to get and inexpensive to use.

Other amazing General Electric lamps are available for various uses on the farm. Infra-red and ultra-violet energy has been harnessed in special lamps designed to relieve pain, promote strong, healthy growth, and control disease germs.

Several uses for which G.E. lamps have been designed are shown here. See your local G-E MAZDA lamp distributor for many other types and sizes of lamps for use on the farm. General Electric Company, Nela Park, Cleveland, Ohio.

1 STUDYING CATALOGS, darning socks, or keeping farm accounts require good light for easy seeing. G-E MAZDA bulbs in modern lamps and fixtures provide the better light that's needed.

2 SPECIAL G-E MAZDA lamps in suitable reflectors provide light for seeing outdoors as well as better protection from prowlers.

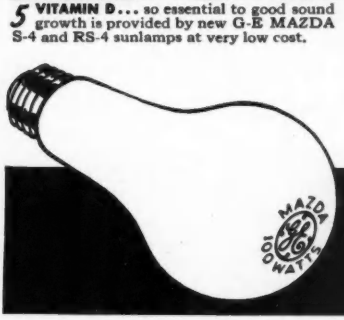
3 G-E GERMICIDAL lamps provide strong ultra-violet radiation to check the growth of and kill injurious germs.

4 NEW REFLECTOR type, 250-watt infra-red (heat ray) bulbs have low brightness and reduced glare . . . relieve aches and pains.

5 VITAMIN D... so essential to good sound growth is provided by new G-E MAZDA S-4 and RS-4 sunlamps at very low cost.

6 G-E MAZDA lamps in suitable reflectors are saving the lives of lambs or little pigs by providing a warm place for them.

7 GENERAL ELECTRIC S-4 OR RS-4 SUN LAMPS provide an excellent means of furnishing vitamin D to the livestock.

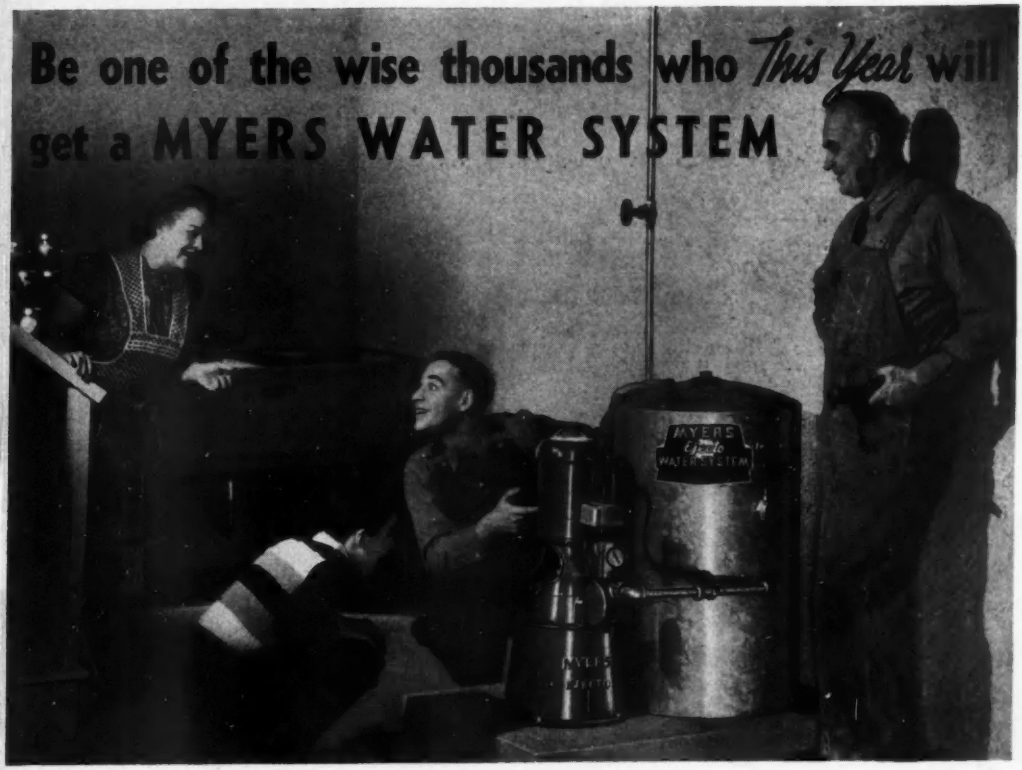


Made to stay brighter longer

G-E MAZDA LAMPS

GENERAL ELECTRIC

Be one of the wise thousands who *This Year* will get a MYERS WATER SYSTEM



Thousands of new Myers Water Systems will go to work on America's farms this year, bringing countless advantages to their new owners. By providing an *automatic and plentiful* water supply, these modern Myers systems will help build bigger production of meat, milk and poultry for defense. They will ease the burden of labor shortage. They will save time for other important farm jobs. They will provide daily comforts and conveniences — *both outside and inside* the home. They will brighten living, safeguard health, and increase farm profits.

Choose a Myers for Real Satisfaction

If YOU need a water system, be wise and get a quality-built Myers unit that you *know* will give you everything you want—that delivers a *strong, full stream* every time you open a faucet—that gives you plenty of water at the house, barn, feed lot and other points *simultaneously*—that is completely automatic (self-starting, self-stopping)—and that has a reputation for *better performance, longer life and lower operating cost* than any other make of water system in the world.

Depend on Your Myers Dealer

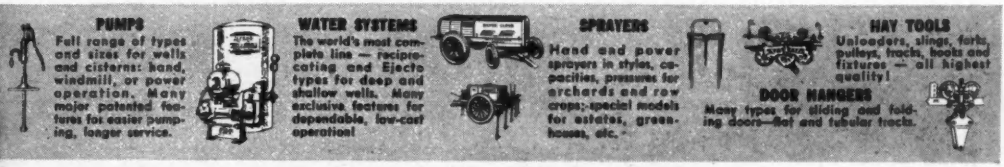
Near you is a Myers dealer who is thoroughly experienced in water supply problems. Call on him for dependable advice and service, whether for repairs to present equipment or a new installation. Write today for his name and free illustrated book, "The A·B·C of Buying a Water System."

THE F. E. MYERS & BRO. CO., 1121 Fourth St., Ashland, Ohio

Manufacturers of Farm Operating Equipment Since 1870

Take Off Your Hat — To The MYERS

12WS2


PUMPS
Full range of types and sizes for wells and cisterns: hand, windmill, or power operation. Many major patented features for easier pumping, longer service.
WATER SYSTEMS
The world's most complete line — reciprocating and Ejecto types for deep and shallow wells. Many exclusive features for dependable, low-cost operation!
SPRAYERS
Hand and power sprayers in styles, capacities, pressures for orchards and row crops; special models for estates, greenhouses, etc.
HAY TOOLS
Unloaders, slings, forks, pulleys, tracks, hooks and fixtures — all highest quality!
DOOR HANGERS
Many types for sliding and folding doors—flat and tubular tracks.

Editor's Chat

"Nuts"

—not the kind you eat,
or put on bolts.
It's what you'll be next summer if you wait to order repairs until you need the machine.

Smile and Do It

Have you been asked to produce more?

Let's smile and do it. In Europe you would be told, not asked; and your crop taken, not bought.

Have your taxes gone up? Let's smile and pay them. They are still much lower than in England.

Have you been asked to repair old machines and get along this year? Let's smile and do it. We still have much more and better machinery than most of the farmers in Europe.

If you have been asked, and paid, and given some choice in the matter, that's the way of democracy, not dictatorship. If we comply, that shows the world that our democratic system still works. If it does not work, we will either be forced into a dictatorship at home, or be licked and ruled by a dictator from abroad.

Shall we teach them a lesson? Let's smile and do it.

Help for Men over Forty

Men, if you have been undergoing a change of life recently, do not be too much disturbed about it. Most farmers over forty are doing it now. It is a distressing time in life. You may have hot flashes when the hired man quits or some gosh-darned part on the binder busts during harvest; or you may have chills when you look at those twenty cows to be milked after plowing corn all day. And when you think of how fine it used to be when son John was still at home, you are likely to be irritable and have fits of depression. Cussing spells, sleeplessness and just "nerves" are other significant symptoms. Some fear going "bug-house." Uninformed or inhibited they have not consulted a specialist.

We are pleased to tell you that agricultural engineering science has moved forward in the past few years. From the experimental laboratories have come developments, and specialists now report that after years of testing on men, a substance known as electricity may be administered which greatly alleviates the torment and suffering. While this synthetic substance is not an infallible cure, it has proved highly effective in a large percentage of cases. It should be taken with judgement and under the prescription of someone who knows the best methods of administering it in specific cases. Most encouraging also is the fact that the price has been reduced in recent years because of increased demand until it is now within reach of most sufferers. The thousands who have tried it speak with renewed exuberance of the welcome relief.

Texas

Last November I spent a week in Texas. I used to live there, and every so often I go back to get my spirits revived and my eyes full of the wide-open-spaces. It's big. Roads are long, straight and fast. Friendliness and smiles are broad. It's a clean, shirt-a-week state, if you don't perspire too much. Farms are whoppers. I drove thirty miles with a friend to look at some cows before he started his day's work. He had just bought 2,400 acres which he was making into a market milk dairy to run as a side-line to his regular job. I stopped at Aggieland Inn on the Texas A. & M. campus, and ate in the mess hall with the Aggie cadets. Just 8,800 of them eat at one time in their two mess halls—and they get to classes on time. On Thanksgiving day 5,600 pounds of broad-breasted turkey and a ton and a half of yams were served at one meal. BIG! And on the campus, more people spoke to me—a stranger—than have spoken to me since I have lived in New York. Reviving!

Defense Bonds and Taxes

Bill was earning $100 per month. He had a good job—with prospects. He lived in a good home. Now he's in the service. He has given up the prospects, the home life, and most of the $100 pay. He may give his life. If he gave up nothing but two-thirds of his income, how many of we stay-at-homes would be willing to match his contribution?

Like it or not, we are in a life and death struggle,—National,—personal. *"All out for defense"* is the slogan. Do we mean it? Are we willing to give as much as the soldier? Taxes and Defense Bonds are an *opportunity*.

George Kable

ELECTRICITY ON THE FARM
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GEORGE W. KABLE, *Editor;* KARL M. MANN, *President;* FRED SHEPPERD, *Editorial Director;* I. H. CASE, *Vice-Pres. and Gen'l Mgr.;* K. H. GORHAM, *Advertising Manager;* H. S. ESSEX, *Production Manager.* CHICAGO: 6 No. Michigan Ave.—W. S. CLEVENGER, *Western Manager;* L. M. ROCHE, *Western Representative.* SAN FRANCISCO: 444 Market St., Room 305—C. H. WOOLLEY. Subscription price 75 cents per year; single copies, 10 cents. *Special bulk rates on application. Contents copyrighted 1942 by Case-Shepperd-Mann Pub. Corp.*

INTERNATIONAL COOLS MILK FOR St. Mary's

Above: St. Mary's Hospital, Rochester, Minn. *Inset:* 12-can International Milk Cooler at the hospital's Mary Knoll Farm.

INTERNATIONAL MILK COOLERS have a great reputation for giving trouble-free service under the most exacting conditions. Every day, in various parts of the country, this cooler line wins new friends through consistent good work.

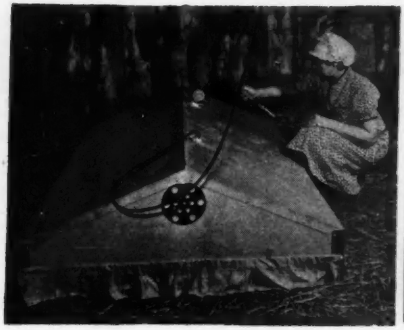
St. Mary's Hospital, in Rochester, Minnesota, has used International Milk Coolers for many years. This world-famous institution owns and operates the Mary Knoll Farm, where 20 cans of milk a day are cooled in an International 12-can cooler for use in the hospital. Morning milk is cooled to 45 degrees; night milk to 34 degrees. Bacteria count averages from 4000 to 8000.

See the nearby International Harvester dealer for complete information on a size and type cooler to meet your requirements.

INTERNATIONAL HARVESTER COMPANY

180 North Michigan Avenue Chicago, Illinois

International Milk Cooler



Kentucky Proves Electric Brooding

"ELECTRICAL brooding is practical and economical in Kentucky. Good management, including good housing, feeding, sanitation, equipment, and the selection of disease-free chicks, is essential to success with an electric brooder as with all other types of heating equipment."

The above is the concluding statement of a report on electric brooding in Kentucky prepared by Earl G. Welch, Extension Agricultural Engineer, and Stanley Caton, Extension Specialist in Poultry. The studies on which the report is based began in the spring of 1939 and ran through the 1941 season. They were undertaken to determine whether the Extension Service was justified in recommending that poultrymen adopt the practice of electric brooding where current was available. The following information, unbiased, and from a large enough number of farms to make it quite conclusive, is taken from the report.

In the three years of the studies 111 brooder installations in 29 counties were under observation. Ten different makes of brooders were used. Because of the many variable factors existing on different farms, no attempt was made to compare the efficiency of different makes of brooders.

The weather conditions in the State during the months of the studies are indicated by the average temperatures taken at Lexington. These are the average day and night temperatures over the whole month. Temperatures during February went down as low as nine above zero.

	1940 Average	1941 Average
February	34.0°	31.2°
March	40.9	38.5
April	51.6	54.0
May	60.0	67.1

Where special wiring was required to serve the brooders, the average length of service line (two wire) was 94 feet. The average cost of wiring including the service wire, but not the meter, was about $11.50. Each brooder house contained an outlet for the brooder and a pull-chain light outlet. Separate ground rods were not provided at each house.

Electric rates varied from 6¼ to 7½ cents per kilowatt-hour in the first blocks of the rates down to 1½ cents per kilowatt-hour where more than 200 kw hrs per month were used. The average for the state for all the studies was 2½ cents. It was determined from the amount added to the electric bills as the result of using the brooders.

Since the type of construction of the brooder house has considerable to do with the successful operation of brooders and mortality and power costs, a somewhat detailed description of the houses is given. They were quite typical of brooder houses one might expect to find on farms in any state.

Brooder House Construction

Floors. Floors on about 60 per cent of the farms were of tongue and groove boards without a subfloor. About 25 per cent were double wood floors and 15 per cent were concrete. About half of the houses were protected from underfloor drafts by boards, earth or straw.

Siding. Vertical boxing with cracks stripped, tongue and groove siding and metal siding were used in approximately equal numbers of houses. All walls were tight.

Roofs. Roofs were of composition or metal roofing on solid sheathing, or metal roofing on strip sheathing.

Wall Insulation. About half the houses had building or roofing paper or corrugated board to a height of 30 inches above the floor, or had double wall construction.

Ventilation. Half the houses had open fronts and muslin curtains. Half had hinged windows, some of which were kept closed during cold

Summary of Electric Brooder Studies

Locations	Month	No. Brooders	Ave. Brooder Capacity	No. Chicks Started	Ave. Per cent. Mortality	Ave. Days Operation	Kw-hrs Used	Kw-hrs per Chick Raised	Cost of Electric Service
1940 Summary									
21 Counties	Jan.	0							
57 Farms	Feb.	4	316	17,204					
64 Brooders	Mar.	41		av. 268	4.6	41	av. 152 (64 brooders.)	.59	av. $0.026
	Apr.	14							
	May	5							
1941 Summary									
12 Counties	Jan.	1							
47 Farms	Feb.	17	348	15,937					
53 Brooders	Mar.	25		av. 300	6.0	44	av. 140 per brooder. 43 brooders.	.52	$0.025 per kw-hr
	Apr.	10							
	May	0							

Notes:
Average kw-hrs per chick and cost of current are for metered demonstrations only.
Brooder capacity based on 7 square inches per chick under hover.

Farmers Find It Saves Time and Labor, Lowers Mortality, Eliminates the Fire Hazard

weather at the beginning of the brooding season. Only about ten percent of the operators reported that litter became wet at some time during the brooding period. These were mostly those who did not use an open front house, or used a tight covering for the windows. In no case was more trouble experienced with damp litter than when some other than electric brooders were used.

"Every farmer expressed satisfac- . . . . . More on page 25

Kentucky Brooder Studies—Tabulation for 1941

Farmer	Date started	Brooder capacity	No. chicks started	Percent mortality	Days operation	Total kw-hrs used	Kw-hrs per chick raised	Cost of electric service	Remarks
Butler County									
Paul Hampton	3/ 7	1,050	1,050	13.8	45	...	...	$18.00	Homemade hovers. Rats killed ½ chickens lost.
Daviess County									
Mrs. J. K. Dozier	3/18	300	209	1.0	34	205	.99	5.32	First experience in artificial brooding.
Garrard County									
Frank Cook	3/ 6	250	200	0.0	53	140	.70	5.26	
Mrs. Emit Long	3/17	350	400	12.5	60	107	.30	3.08	
R. A. Broadus	3/ 7	350	238	9.6	55	158	.73	6.00	
Newland May	2/29	250	250	4.4	38	161	.67	4.83	
Mrs. Hiram Land	2/25	250	208	3.3	42	151	.75	4.95	
Paul Walden	2/13	1,750	1,650	4.0	42	276	.17	7.98	5-350 chick brooders.
Harry Ray	2/15	250	250	6.0	54	162	.69	5.00	
J. W. Sanders	3/ 8	480	322	8.0	30	226	.76	6.78	
Geo. Rich	3/ 6	200	130	0.7	42	60	.46	2.00	
Royston Ray	3/13	200	208	9.6	40	73	.39	2.00	
Ben E. Naylor	4/ 7	250	100	1.0	49	146	1.47	4.75	100 chicks, 250 capacity.
Willie Smith	3/27	220	208	5.3	35	59	.29	1.17	
Mrs. William Ham	4/ 6	350	200	3.5	60	147	.76	3.13	
Mrs. R. R. Anderson	4/ 3	200	174	1.1	50	89	.51	5.00	
William Ray	2/18	350	250	6.0	50	191	.81	7.00	
Grayson County									
Herman W. Layman	2/18	500	292	3.7	62	145	.51	2.40	
Greenup County									
Mrs. Brady Hatfield	4/15	500	400	12.5	47	...	...	1.00	No Meter.
Henry County									
J. N. Bryant	4/ 8	385	312	4.8	54	...	...	3.59	No Meter.
LaRue County									
Mrs. J. T. Meers	4/24	382	300	1.8	39	45	.12	1.12	
Mrs. Lawson Morrison	2/17	500	467	6.4	42	252	.57	...	
Jenny Nicholas	2/24	350	294	3.6	45	95	.33	2.80	Started 2 wk. old chicks.
Mrs. Joe Dixon	4/ 7	500	400	3.0	28	73	.19	2.75	
Lawrence Keith	4/ 1	350	309	1.0	33	...	...	2.00	No Meter.
Tom Ovesen	2/17	300	205	3.4	49	242	1.2	4.00	
Geo. Howell	3/25	350	363	2.5	33	79	.22	...	
Arthur O. Goodin	2/18	350	306	10.4	49	220	.80	5.80	
Mr. & Mrs. Lee Walters	3/14	500	416	3.8	59	121	.30	3.85	
B. S. Carter	2/10	300	264	5.3	42	378	1.50	...	
Logan County									
J. W. Lawson	3/ 7	300	300	1.3	64	200	.68	6.86	
Mrs. H. H. Rogers	1/21	350	250	2.8	57	247	1.0	3.85	80% of current used during 1st three weeks.
Madison (Southern) County									
Bill Botkins	2/ 7	350	289	3.1	36	180	.64	4.85	$0.027 per kw-hr
Oldham County									
Mrs. Clay Johnston	2/21	465	304	10.8	58	307	1.13	4.00	
Mrs. Catherine Johnston	3/ 4	350	333	2.4	50	156	.48	3.12	
Mrs. J. B. Mount, Jr.	3/22	465	311	2.2	46	195	.64	3.90	
Mrs. F. H. Hoick	3/25	350	276	10.1	37	159	.64	3.18	
S. S. Mount	3/25	500	310	2.9	41	218	.70	4.36	
M. J. Hampton	4/10	300	200	4.0	30	148	.77	2.96	
Pulaski County									
Oscar Ard	3/23	500	500	6.0	50	133	.28	2.35	
Chester Ard	3/23	500	500	8.0	49	140	.30	2.45	
H. W. Warner	4/ 8	350	358	2.2	22	70	.20	1.22	
P. O. Norfleet	3/18	350	258	15.5	32	184	.84	3.22	
Wayne County									
Cable Duncan	3.28	400	420	7.1	31	...	...	6.00	No Meter.
Mrs. O. B. Back	3/20	300	280	6.0	40	76	.29	1.30	
J. P. McLane	3/ 5	300	316	.6	50	174	.56	3.05	
W. I. West	3/18	400	275	18.1	28	158	.70	2.76	

Farm Production Increased By Electricity

Prize Winning Statements from Farmers and Farm Women in the December, 1941, Contest on "How Electricity Helped Me Increase Production"

First Prize

● "We boosted production with electricity on our farm by installing an electric pump to bring fresh water to the cows' drinking buckets, which increased milk production 20 percent. In November we increased the number of milking cows from 15 to 27 when we purchased an electric milking machine. Month's record: 14,678 pounds of milk or a gain in one month of over 3,000 pounds."

THORNTON K. BROWN,
R 1, Walden, N. Y.

Second Prize

● "We sometimes have to suffer a great loss to learn a simple lesson. This fall, possibly due to a lot of dark, foggy weather, an epidemic of diseases broke out in 4 out of 5 poultry flocks in our county. I began losing one or two every night and began spraying them with a disinfectant. One morning I lost five, and sick at heart, not only because of the dead birds but at the drop in egg production, I went to see our hatcheryman.

"'There is nothing I can do to help,' he said, 'unless'—and he hesitated a minute. 'By the way, do you have electricity?'

"'Yes we have.'

"'Then I would recommend,' he said, 'that you keep the lights on in your chicken barn to lengthen the hen's day to about 16 hours. They are not eating enough because they are sick. A longer day will encourage them to eat more and thus increase their vitality to fight off diseases.'

"I tried it and those lights worked a miracle. In three days time you could actually see the improvement. Losses diminished, egg production came up by leaps and bounds and the appearance of my flock was grand to see.

"We had just had our chicken barn wired last spring but it took this loss to make me realize that within the electric light lies the power 1) to control the health of a flock of chickens, 2) to increase egg production, 3) to fatten my purse, and 4) to help in defense of my country."

MRS. RUDY BUSACKER,
R. 3, Long Prairie, Minn.

The Five $3 Award Winners

● "By providing all-night lights for 1200 White Leghorn hens and by keeping the icy chill out of their drinking water our egg production increased 20 percent in this month of December 1941."

K. M. WEBB,
Allisonia, Virginia.

● "We boosted production with electricity on our farm by installing two electric water heaters and lights controlled by a time switch in our chicken house. By using lights on the hens at night and by keeping the drinking water at the correct temperature we increased the egg production of our flock as follows:

Before time switch and water heater were installed

Nov. 1939	84	dozen eggs
Dec. 1939	148	" "
Jan. 1940	52	" "
Feb. 1940	151½	" "

After time switch and water heater were installed

Nov. 1940	270	dozen eggs
Dec. 1940	515½	" "
Jan. 1941	402	" "
Feb. 1941	353	" "

FRANCES MCCUNE,
R 2, Formoso, Kansas.

● "When I joined the 4-H Club, I decided to help pay my way through school by raising bullfrogs. I dug four ponds, put the frogs in and strung electric lights over the water. I turn the lights on at dusk and keep them burning until eleven every night. Bugs by the thousands, attracted by the lights, drop into the ponds, and the waistlines of my bullfrogs are stretched to the limit. In November I sold $10.90 worth of frog legs to my local market, and in December $16.50 worth. The frogs cost me nothing, as I restock my ponds from a nearby creek. The bugs also boost our egg production by placing a large bucket one-fourth full of water under one light and feeding the bugs to the chickens."

MISS JOSIE BAKER,
R 2, Midlothian, Texas.

● "We boosted production with electricity on our farm by lighting our hen house when the hens started into molt this fall. The 180 hens never got below 50 eggs daily, paying their own way through the molt, and are now back up to 100 eggs and over. Usually we have had to dig down into our pockets to feed them 5 or 6 weeks."

MRS. JOHN C. JONES,
Myrtle Creek, Oregon.

● "We boosted production with electricity on our farm by installing an automatic poultry house time switch and lights which increased the egg production from an average of 25 eggs a day to 75 eggs a day within ten days from the time it was turned on this fall. We are now getting from 80 to 90 eggs a day from a flock of 140 hens, and 25 of these are late summer pullets.

"By installing an electric milker, we increased each cow's production

by about one pound of milk a day, and with half the labor."

MRS. VERNON D. GELABAST,
RFD 1, Louisburg, Kansas.

• And here is an extra one that came with the drawing shown on the opposite page. The *Defense Production* evidence is indisputable. If the method of applying electricity to this production job had been more explicit, the statement might have won the first prize. This is the statement: "We boosted production with electricity on our farm by lighting the hen house, putting in an electric milk cooler, milking machine and a pump. Result: More eggs, more milk, and triplets in the house."

PAUL J. HOOK,
Hillsboro, N. H.

Some other letters were excellent. We are saving them for use in future issues.

Electricity Saved $189.50 on Milk Cooling

By **MRS. L. V. PHILLIPS,**
Route 1, Forest, Va.

We bought a 300 pound block of ice every day for the six warmer months at a cost of $1.05 per block to cool and keep milk from our 26 cows until it could be taken to the creamery each morning in Lynchburg. During the other six months we averaged a 300 pound block every other day at $1.05 per block.

182 days	@ $1.05 =	$191.10
183 days	@ $1.05 =	95.08
2		
Total ice bill for year..		$287.18

During the following year after we had installed an electric milk cooling tank, our bill for electricty during the six warm months averaged $9.18, and for the other six months $7.10 per month.

Six months	@ $9.18 =	$55.08
Six months	@ 7.10 =	42.60
Total electric bill for year..		$97.68
Year's ice bill.....		$287.18
Year's electric bill.....		97.68
Saved by using electricity..		$189.50

The electric bill also included lights in the barn, milk house, hen house, electricity for brooders, radio, washing machine, iron, electric fly spray, and lights in the house.

We also have a very much better grade of milk since having our electric cooling and storing system.

★ ***Buy Defense Bonds*** ★

Good Light from Old Lamps

School Girls Stage Remodeling Demonstration

Just a year ago this team of four attractive and talented girls won an award at the Pennsylvania State Farm Show for giving the best electrical demonstration of any girl's team in the State. This is a real honor, too, for dozens of teams from all over the state compete in local contests, about 28 of the best ones being selected to go to Harrisburg for the final contest at the Farm Show. The picture was taken at the University of Pennsylvania Rural Electrification Short Course where the demonstration was repeated. From left to right, the girls are Marjorie Boyd, Alettia Terrill, Eleanor Gillespie and Eloise Fleet. They are all from the Cambridge Springs High School Home Economics Department.

The demonstration was on how to make over old lamps into new types of sight-saving units by adding inexpensive holders for diffusing bowls and light colored, reflecting shades. Each girl very cleverly took her old lamp apart on the stage, substituted the new adapters, bowls and shades and turned the light back on to show what a great improvement could be made in a simple change-over. The adapters, bowls and shades can be obtained from many utility companies, lighting fixture stores, ten-cent stores and from mail order houses. The essential parts are a lamp of correct wattage, a diffusing bowl of white glass or plastic, a shade of the proper size, shape and material for the lamp to be remade, and the shade and bowl holders. Even the old flexible shaft glaring desk lamp can be made over into an IES type, as shown on the table at the right.

Plan Farm Irrigation Now

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In view of the scarcity of materials, it is not too early now to plan for next season's irrigation installation. Main line pipe can be picked up at favorable opportunities, orders for nozzles and lightweight movable lines placed now have greater possibilities of delivery than those postponed until spring. Portable irrigation systems have proved their worth and represent an economical means for applying supplemental water to growing crops.

W. C. Krueger, New Jersey Extension Service.

Farm Production Increased By Electricity

Prize Winning Statements from Farmers and Farm Women in the December, 1941, Contest on "How Electricity Helped Me Increase Production"

First Prize

● "We boosted production with electricity on our farm by installing an electric pump to bring fresh water to the cows' drinking buckets, which increased milk production 20 percent. In November we increased the number of milking cows from 15 to 27 when we purchased an electric milking machine. Month's record: 14,678 pounds of milk or a gain in one month of over 3,000 pounds."

THORNTON K. BROWN,
R 1, Walden, N. Y.

Second Prize

● "We sometimes have to suffer a great loss to learn a simple lesson. This fall, possibly due to a lot of dark, foggy weather, an epidemic of diseases broke out in 4 out of 5 poultry flocks in our county. I began losing one or two every night and began spraying them with a disinfectant. One morning I lost five, and sick at heart, not only because of the dead birds but at the drop in egg production, I went to see our hatcheryman.

"'There is nothing I can do to help,' he said, 'unless'—and he hesitated a minute. 'By the way, do you have electricity?'

"'Yes we have.'

"'Then I would recommend,' he said, 'that you keep the lights on in your chicken barn to lengthen the hen's day to about 16 hours. They are not eating enough because they are sick. A longer day will encourage them to eat more and thus increase their vitality to fight off diseases.'

"I tried it and those lights worked a miracle. In three days time you could actually see the improvement. Losses diminished, egg production came up by leaps and bounds and the appearance of my flock was grand to see.

"We had just had our chicken barn wired last spring but it took this loss to make me realize that within the electric light lies the power 1) to control the health of a flock of chickens, 2) to increase egg production, 3) to fatten my purse, and 4) to help in defense of my country."

MRS. RUDY BUSACKER,
R. 3, Long Prairie, Minn.

The Five $3 Award Winners

● "By providing all-night lights for 1200 White Leghorn hens and by keeping the icy chill out of their drinking water our egg production increased 20 percent in this month of December 1941."

K. M. WEBB,
Allisonia, Virginia.

● "We boosted production with electricity on our farm by installing two electric water heaters and lights controlled by a time switch in our chicken house. By using lights on the hens at night and by keeping the drinking water at the correct temperature we increased the egg production of our flock as follows:

Before time switch and water heater were installed		
Nov. 1939	84	dozen eggs
Dec. 1939	148	" "
Jan. 1940	52	" "
Feb. 1940	151½	" "
After time switch and water heater were installed		
Nov. 1940	270	dozen eggs
Dec. 1940	515½	" "
Jan. 1941	402	" "
Feb. 1941	353	" "

FRANCES MCCUNE,
R 2, Formoso, Kansas.

● "When I joined the 4-H Club, I decided to help pay my way through school by raising bullfrogs. I dug four ponds, put the frogs in and strung electric lights over the water. I turn the lights on at dusk and keep them burning until eleven every night. Bugs by the thousands, attracted by the lights, drop into the ponds, and the waistlines of my bullfrogs are stretched to the limit. In November I sold $10.90 worth of frog legs to my local market, and in December $16.50 worth. The frogs cost me nothing, as I restock my ponds from a nearby creek. The bugs also boost our egg production by placing a large bucket one-fourth full of water under one light and feeding the bugs to the chickens."

MISS JOSIE BAKER,
R 2, Midlothian, Texas.

● "We boosted production with electricity on our farm by lighting our hen house when the hens started into molt this fall. The 180 hens never got below 50 eggs daily, paying their own way through the molt, and are now back up to 100 eggs and over. Usually we have had to dig down into our pockets to feed them 5 or 6 weeks."

MRS. JOHN C. JONES,
Myrtle Creek, Oregon.

● "We boosted production with electricity on our farm by installing an automatic poultry house time switch and lights which increased the egg production from an average of 25 eggs a day to 75 eggs a day within ten days from the time it was turned on this fall. We are now getting from 80 to 90 eggs a day from a flock of 140 hens, and 25 of these are late summer pullets.

"By installing an electric milker, we increased each cow's production

by about one pound of milk a day, and with half the labor."

MRS. VERNON D. GELABAST,
RFD 1, Louisburg, Kansas.

• And here is an extra one that came with the drawing shown on the opposite page. The *Defense Production* evidence is indisputable. If the method of applying electricity to this production job had been more explicit, the statement might have won the first prize. This is the statement: "We boosted production with electricity on our farm by lighting the hen house, putting in an electric milk cooler, milking machine and a pump. Result: More eggs, more milk, and triplets in the house."

PAUL J. HOOK,
Hillsboro, N. H.

Some other letters were excellent. We are saving them for use in future issues.

Electricity Saved $189.50 on Milk Cooling

By **MRS. L. V. PHILLIPS,**
Route 1, Forest, Va.

We bought a 300 pound block of ice every day for the six warmer months at a cost of $1.05 per block to cool and keep milk from our 26 cows until it could be taken to the creamery each morning in Lynchburg. During the other six months we averaged a 300 pound block every other day at $1.05 per block.

182 days	@ $1.05 =	$191.10
183 days	@ $1.05 =	96.08
2		
Total ice bill for year..		$287.18

During the following year after we had installed an electric milk cooling tank, our bill for electricty during the six warm months averaged $9.18, and for the other six months $7.10 per month.

Six months	@ $9.18 =	$55.08
Six months	@ 7.10 =	42.60
Total electric bill for year..		$97.68
Year's ice bill.....		$287.18
Year's electric bill.....		97.68
Saved by using electricity..		$189.50

The electric bill also included lights in the barn, milk house, hen house, electricity for brooders, radio, washing machine, iron, electric fly spray, and lights in the house.

We also have a very much better grade of milk since having our electric cooling and storing system.

★ ***Buy Defense Bonds*** ★

Good Light from Old Lamps

School Girls Stage Remodeling Demonstration

Just a year ago this team of four attractive and talented girls won an award at the Pennsylvania State Farm Show for giving the best electrical demonstration of any girl's team in the State. This is a real honor, too, for dozens of teams from all over the state compete in local contests, about 28 of the best ones being selected to go to Harrisburg for the final contest at the Farm Show. The picture was taken at the University of Pennsylvania Rural Electrification Short Course where the demonstration was repeated. From left to right, the girls are Marjorie Boyd, Alettia Terrill, Eleanor Gillespie and Eloise Fleet. They are all from the Cambridge Springs High School Home Economics Department.

The demonstration was on how to make over old lamps into new types of sight-saving units by adding inexpensive holders for diffusing bowls and light colored, reflecting shades. Each girl very cleverly took her old lamp apart on the stage, substituted the new adapters, bowls and shades and turned the light back on to show what a great improvement could be made in a simple change-over. The adapters, bowls and shades can be obtained from many utility companies, lighting fixture stores, tencent stores and from mail order houses. The essential parts are a lamp of correct wattage, a diffusing bowl of white glass or plastic, a shade of the proper size, shape and material for the lamp to be remade, and the shade and bowl holders. Even the old flexible shaft glaring desk lamp can be made over into an IES type, as shown on the table at the right.

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W. C. Krueger, New Jersey Extension Service.

Bee Business

A New York Farmer Builds an Electric Honey Bottler, Electric Steam Boiler for Uncapping Knife, and De-Sugaring Oven. He makes Electricity Pay Dividends in the Honey Business.

By **GEO. W. KABLE**

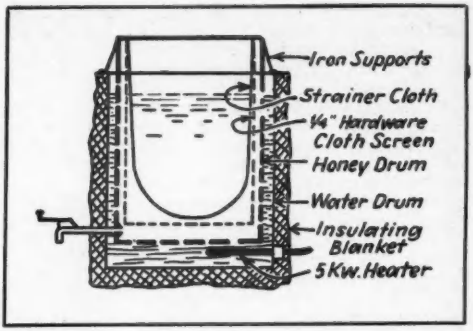


Diagram of honey heater and bottler. The wire screen is necessary to hold the strainer cloth away from the sides of the drum. One strainer cloth was good for five tons of honey. The outer drum is four inches larger in diameter than the inner drum. The inner drum holds 50 gallons.

Harold Merrell

HAROLD A. MERRELL is a honey producer of near Wolcott, New York—just two shades off the shore of Lake Ontario. He has been farming since 1920, but is still a young man—a man with ideas that are intelligently turned into realities.

Mr. Merrell is a Cornell graduate. His 170-acre farm is stocked with Milking Shorthorns and 1,400 Leghorn layers. But his bees far outnumber his hens and cows and provide his major source of income. During the past year he has had 1,100 colonies, and has been buying some extra honey to supply his trade.

Eleven hundred hives of bees can provide a lot of "sweetness" or "sting." This is a "sweet" story of good management and marketing.

Most of the Merrell honey is sold and delivered to local stores. By producing a good, reliable product, taking back sugared honey for replacement and treating customers right, a good demand has been built up.

The newest piece of electrical equipment in the honey room is the honey bottler. It consists of a 50-gallon water jacketed honey drum with a five-kilowatt heating element in the water for warming the honey to 160° for bottling. The purpose of the bottler is to save time, cans and one handling of the honey. With this outfit the honey is placed in the bottling drum direct from the extractor instead of first putting it in 60-pound cans, heating the cans in a tub of water and bottling from the cans. The illustration shows the construction of the bottler. For a smaller producer it could be made in smaller size. This heater brings the honey up to 160° in from ½ to ¾ hour from a cold start, and the second batch in less time. The drum holds 480 pounds of honey. It can be put into five-pound pails at the rate of about 220 pounds per hour. The cost of the bottler was approximately:

5 KW Immersion heater....	$16.00
Root bottling valve.....	9.00
50 gal. honey drum.....	.50
Water jacket drum.....	3.50
Rock wool insulation.....	1.50
Labor about	19.50
Total	$50.00

Mr. Merrell says he saved this much on 60 pound cans and in labor the first year.

Uncapping Devices in Use

Two types of uncapping devices were in use last year. The most unorthodox one was a swing-hammer uncapper invented by George Wilcox, a honey producer and retired tool and die maker of Borodino, N. Y. A 1-horsepower motor rotated the "hammers" at high speed against the caps, removing the caps on both sides in one operation. No heat was necessary and by removing a very thin slice there was less loss of honey in the uncapping operation. An ingenious cam kept the hammers from striking the frame. This ma-

Left: Steam heated uncapping knife. The hose conducts steam to and away from the knife which is oscillated by a ⅓ h.p. motor while the honey frame is pushed down across it. The heat keeps the knife from gumming up with honey. Center: Sugared honey liquefier. The inner oven is of galvanized iron with four inches of insulation and a wood housing around it. The 1,200 watt heaters will liquefy 300 pounds of crystallized honey at one time. Right: Photograph of the honey bottler showing the insulating blanket around the outside of the drum.

Left: Home-made ten gallon, one to three kilowatt, insulated steam boiler. The water glass and the end of the heating element are on the end of the boiler. Steam outlet, relief valve and filling arrangement are all attached to the pipe on top. Relief valve is set for five pounds pressure. **Right:** The Wilcox swing-hammer uncapping machine. The hammer cylinder which Mr. Merrill is pointing at (one on each side of the vertical frame) is rotated by a 1 hp. motor. The hand crank is used to move the honey frame past the hammers. Less honey is lost than with the steam heated uncapping knives.

chine is still in the experimental stage and further work on it has been delayed by defense activities.

The conventional steam heated uncapping knife gets its steam in the Merrill plant from a home-made electric boiler. The boiler itself is a 10-gallon expansion tank from a hot water heating system. It contains a 1,000-2,000-3,000-watt heating element having the wattage controlled by a 4-way switch. The boiler has a water glass, a pressure relief valve which is set for five pounds pressure and a galvanized jacket with four inches of mineral wool beneath it and the boiler. In addition to the uncapping knife, steam is used to heat water in the jacket of the honey strainer tank—a large tank holding 500 pounds of honey or more. The boiler cost about $25 to build. The cost of operating is only about 25c per day. It gets up steam in about 30 minutes.

Construction and Use of Liquefier

Another novel piece of equipment is the sugared honey liquefier. It is a galvanized iron box with 1,200 watts in heating elements below the iron grating that holds five 60-pound cans of honey. The temperature is held at 140°-160° by a thermostat. The oven has a wood housing around it with four inches of insulation between. The time needed for liquefying crystalized honey varies with the outside temperature but Mr. Merrell usually turns the heat on at night, and the honey is ready to take out in the morning. When on the delivery route to stores, any crystalized honey on the shelves is brought back and liquefied. The liquefying cabinet cost about $30.

Other electric equipment in use includes 1/3 horsepower motor to drive the steam uncapping knife, a 1½-horsepower motor on the two extractors, an electric fan, lights and a fly trap.

Pleased With Electric Equipment

Mr. Merrell is pleased with his electric equipment. He formerly used gasoline stoves for generating steam for the uncapping knife and for warming honey for bottling. The stoves were a fire hazard, were much slower and required a mechanic to keep them burning safely. The electric steam boiler saves about an hour's time per day for a man. Steam heating of the strainer improves the honey quality by not over heating and keeps it flowing uniformly through the strainers. Anyone can snap the switches to heat the boiler or bottler, and because they heat up fast, a man can accomplish something even though he has only a few hours' time to work.

Mr. Merrell had the assistance of Carl Jeerings and Lawrence De Back, power company rural service men in the design and building of the equipment.

Purdue Heats Stock Waterer

By **JOHN C. PETERSON,**
Delphi, Indiana

Recent experiments at Purdue University show that it is practical to use electricity to keep the water for livestock from freezing. Prof. Anderson says: "We have a small water tank four feet long, two feet wide, and two feet deep, which is well insulated and is provided with two thermostatically controlled heating elements from an ordinary electric brooder stove. A part of the top of the tank is open to allow the livestock to drink, and an automatic float keeps the tank full of water. This tank has been left out in the open without any protection by buildings, and has been used to water some of the ters used in experimental feeding projects at the University. During the cold winter of 1939-40, 248 kw-hr were required but during last winter only 101 kw-hr were required to keep the water at a satisfactory temperature. At a cost of 3c per kw-hr this would mean $8.44 and $3.03 respectively for each winter. At no time was there any ice on the tank, and the steers had a supply of water whenever they wanted it." In addition

to this convenient method of keeping a constant supply of water before the animals the steers made slightly cheaper gains.

NOTE. Electric stock tank heaters, thermostatically controlled and of a wattage suitable for tanks such as this, are available. They are self-contained and need only to be placed in the tank and plugged into a 115 volt circuit.

The Soybean Industry

Prior to 1900, the soybean was planted only in U. S. gardens as a curious plant from the Orient, but now, 40 years later, the manufacture of soybean oil cake, and meal according to the Census is a $44,000,000 a year industry before the manufactured value of products from these soybean materials is taken into account.

Power Center in a Barn

Farm Labor Problem Solved by Concentrating Electrified Equipment

By D. E. WIANT

IN 1936 when Alva Cronkhite left the automobile business and moved to a one-hundred acre run-down farm near Stockbridge, Michigan, he found a thirty by forty foot barn with a mouse and weevil infested bin for a grain storage.

This is the story as Mr. Cronkhite tells it. "One thing was certain, I had to have a place to store grain. The question was, should I build a new granary outside the barn or build new bins in the barn. The production of milk and eggs seemed to be the most profitable for this locality and as all the grain raised on the farm would be fed through the barn, we decided to add a twenty by forty foot lean-to to the barn. The overhead space in the lean-to was ideal for grain storage. We built six overhead bins, two of them with hoppered bottoms for ground feed or grain mixed ready to be ground. All the bins had gates in the bottom.

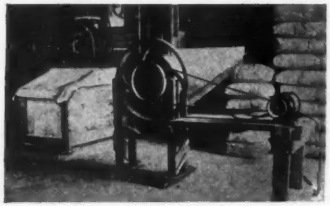
"For the first season the grain was carried up to the overhead bins, and I was sure that I wanted no more of that, so I built an elevator twenty feet high costing $20.45 and mounted a one-third horsepower motor on it. I can elevate about one hundred and fifty pounds of grain a minute, or four or five tons per hour for a power cost of one-half cent per ton.

"We use this elevator two or three times a week the year around. We don't have to worry about the heating of combined grain. With the elevator we can change grain from bin to bin if it starts to heat, and we can fill the bins clear to the top. When ear corn becomes dry enough, we shell it and story it in the overhead bins ready to be ground. Dairy feed is mixed and then stored in a hoppered bottom bin and ground daily. The hoppered bottom bins hold about seventy-five bushels each. Our chick feed—shelled corn, oats and wheat is mixed in the elevator hopper which holds about two hundred and fifty pounds, and is elevated into a hopper bottomed bin ready to be ground.

Portable Automatic Mill

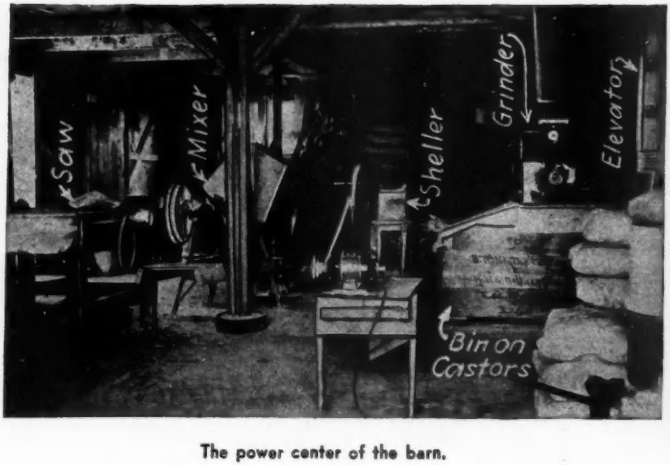
"A one horsepower hammer mill is installed on a large box which is mounted on casters so that it can be moved under any of the bins. The mill is equipped with an automatic feed and requires no attention after the switch is turned, and the chute from the bin is opened. Our power company recently installed a meter on the grinder and it used seven and one-half kilowatt hours to grind twelve hundred pounds of dairy cow feed through a three-sixteenth inch screen and three hundred pounds of chick feed through a one-eighth inch screen. That made the power cost about one cent per hundred pounds.

"It has always been our aim to arrange things to save time, labor and money. We have installed in a twelve foot square, the small grain elevator, feed grinder, a concrete mixer which is used as a feed mixer, a table rip saw, corn sheller, and a pipe-line milker all operated by electric power. The equipment in this twelve foot square helps solve our farm labor problem. I wish that every dollar I spent brought me as much as each dollar I spend for electricity. Here on the farm we have to cut the overhead and I do not know of anything that has come to the farmer in the last ten years that will help him cut his overhead more than electricity. One thing I am sure of, if I couldn't have secured an electric line out to the farm in 1936 well, I wouldn't be a farmer today."

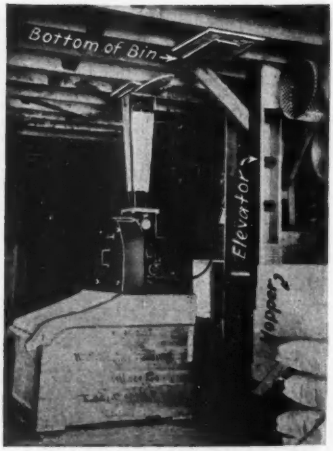


Above: The corn sheller with elevator mixing hopper immediately behind it. Note the pulley on the sheller improvised from an old brake drum.

Below: The ½ h.p. hammer mill is mounted on top of the ground feed bin, which is set on castors and may be moved under the slide outlets of the different hopper-bottomed bins. Two outlets are shown. At the right is the mixing hopper at the foot of the vertical bucket elevator.

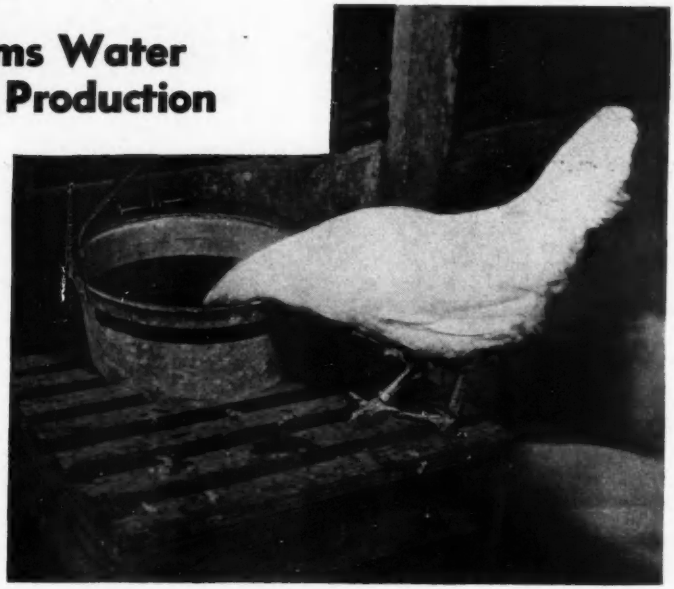


The power center of the barn.



Electricity Warms Water for Winter Egg Production

By **DAMON D. CRANZ,**
Rural Representative, Akron Div., Ohio Edison Company



I have just completed a survey of many types of poultry raisers, from farmers with small flocks of 50 hens to the commercial poultrymen with thousands of laying hens. These farmers have left no doubt in my mind as to the value—many say the absolute necessity—of using electric poultry water warmers for high egg production. Even the small flock owners are using electric water warmers to insure a supply of water at the right temperature at all times.

I know of no better answer to the problem of the poultryman who is debating the installing of water warmers, than the opinions of actual users. Here are some of the comments, which were made by poultrymen living in Northern Ohio where the winters are moderately cold. They are typical general farmers, who must watch their expenditures and spend their money where it will do the most good.

Lights Increase Water Consumption

Mrs. Glen Boyd, Medina, Ohio. Four hundred March hatched white rock pullets. Eggs go to a local hatchery during hatching season. "Our lights are turned on at 3 a. m. and we know from experience that the chickens drink a lot of water before we get up. Our two story poultry house is divided into four pens and we have one of the trough type water containers in each pen. Each water container has a built-on electric heater on the bottom of the trough. The heater is not automatic, but it keeps the water warm and water consumption and egg production do not drop off every time there is a cold snap. We are also much pleased with our two electric brooders which operated last March in rooms without additional heat and brooded the pullets in this flock."

C. E. Reich, R. D. 2. Medina, Ohio. General farm with three hundred white leghorn hens. "We have been using two of the pan type electric heaters, setting the fountains on them, and they do a good job. I used to carry hot water to the hen house four or five times a day in cold weather. Now I can go about my work and know that the chickens have warm water all the time. I expect to buy another heater soon and I think it will be one of the automatic heaters like my neighbor has. It is a type that turns off when the water gets to 50° F, thus saving current."

Mrs. Henry Korte, R. D. 1, Cuyahoga Falls, Ohio. Small suburban farm. 250 white leghorn hens. "We secured one of the automatic immersion heaters last fall and use it in an eight gallon fountain. We also use an oil heater under another fountain. We have found that chickens do not like water too warm any better than they like it too cold. The automatic electric water warmer keeps the water at just the right temperature whether the weather is mild or very cold. Our electric brooder works fine too and saves so much work."

Mrs. Theodore Hoddinott, Medina, Ohio. General farm, 300 white leghorn and white rock hens. "We use three of the automatic immersion type electric heaters. The lights turn on with a time switch at 2:30 a.m. and we no longer worry about the chickens having plenty of water at the right temperature, when they come off the roost as well as during the day. Several times we have found the heaters out in the litter, but the automatic control turned them off so there was no danger of fire. We think that safety is an important advantage of the automatic type of heater. We think that we get enough extra eggs in a few days to pay for the extra current used each month."

Mrs. Harley Boltz, R. D. 1, Everett, Ohio. General farm with 700 laying hens. "We have two kinds of water heaters, the pan type and the automatic immersion heaters. We like the automatic heaters best as they keep the water at the right temperature in all kinds of weather. We think that water heaters are entirely necessary to maintain even production. It is hard to get chickens back into production. if they drop off due to ice cold water or other things that affect their normal habits."

Many home-made water heaters give excellent results, but care should be exercised to assure safety. A light bulb or low wattage space heater, for example, can be installed in a tight, well insulated box. The drinking vessel is then placed over, or part way into the box, so that the heat passes up through the bottom of the water container. The desired temperatures can be maintained by changing the size of the heating element for colder weather. Heaters with a rating of from 30 to 40 watts will generally prove satisfactory for a 14 quart pail or fountain. The automatic heaters are of higher wattages, but use current only part of the time and are generally most economical to operate.

There are many days even in winter when no heat is required. A poultry raiser will find that the small increase in his monthly electric bill is generally paid for by the extra eggs obtained in one or two days' time. The balance is extra profit and soon pays for the original equipment.

WHAT KIND OF WAR WEAPON IS THIS?

You are looking at one of America's greatest weapons for Victory.

It isn't new, or secret, or revolutionary. It's an ordinary high-tension line insulator.

But insulators are helping to bring dependable electric power to farms throughout America . . . helping the nation's farmers to produce the vital stores of *food* without which there can be no victory . . . *helping to win this war!*

In the difficult times ahead, electricity will shoulder more and more of agriculture's burden. When hired help is scarce, "wired help" will replace it. When increased farm production is essential, modern electrical equipment will step up farm efficiency. When work is harder, electricity will provide the hours of pleasure and relaxation that make hard work possible.

Wartime brings new problems to every American farmer. Electricity has a ready solution for many of these problems — quite possibly, the very ones *you* will have to face. That's why it will pay you to study *all* the ways in which electricity can be put to profitable use in your own farming operations.

And when you look to electricity, look to Westinghouse . . . the name that stands for the highest development of all the good things that electricity makes possible.

Westinghouse Electric & Manufacturing Co., Pittsburgh, Pennsylvania.

Westinghouse

ELECTRICAL PARTNER OF AGRICULTURE

Electrical Housekeeping

Edited by **GAIL MEREDITH**

Second Helpings

PROBABLY most of you would agree with me that second helpings are a pretty accurate measure of good cooking. In fact no other test is worth very much if the food doesn't vanish at the table.

This pot roast I'm going to tell you about almost never has a chance to appear as hash. You start out with three or four pounds of shoulder cut and a good heavy skillet. Put the skillet on the big burner of your electric range and turn the current on high to heat the skillet quickly. Cut up pieces of suet and fry them out.

While the suet is melting, dredge the beef with flour and have it ready to drop in the pan to brown before the fat begins to smoke. Turn the heat down after you put the meat in, so you can brown it slowly. As the second side browns, season the top with salt and pepper, a leaf of bay, and a medium sized onion sliced. Add half a cup of hot water and cover the skillet tightly. Leave the switch turned to low and you can go off and knit for the Red Cross while the meat slowly cooks itself tender.

That's electric cooking for you! Plenty of heat when you need it, and a low, low fire, exactly the same hour after hour, to depend on for bringing out the flavor and tenderness in a piece of beef.

Perhaps you don't think it takes a good cook to dish up an appetizing bowl of potatoes. I think it does. More than that, to be sure that bowl of potatoes is a nourishing as well as a filling dish, cooks today have to know that the vitamins and minerals in our familiar friend the potato are skittish elements that are all too apt to turn up missing with careless handling.

Many's the time I've peeled a pan of potatoes in the morning, covered them with water and set them away on the kitchen table with a little sigh of satisfaction at having that much done toward dinner. We've discovered lately that that was pretty wasteful saving. That the water soluble vitamins and the minerals lost no time in soaking right out into the water, leaving a potato that looked the same, but had lost its most important food values.

But if you like to get most of your work done in the morning, don't be entirely discouraged about this business of peeling potatoes —or other vegetables — beforehand. I learned last fall that you can do it if you will put them right in the kettle you are cooking them in, along with the cooking water, then cover them tightly and put them in the refrigerator until you are ready to cook them. It seems that cold discourages any attempt of those vitamins and minerals to escape.

Proper Cooking Essential

Proper cooking is another way to keep those vital nutrients—we might just as well get used to that word because we are going to hear it often enough while we are trying to get a better nourished citizenry in this country of ours—to keep those nutrients in. And the proper cooking is to set the kettle on the burner it fits and turn the current to high and bring it to a boil as quickly as possible. Then as soon as it steams, to flip the switch back to low, or simmer, or off entirely, depending on your range. All you want now is enough heat to keep that half a cup of water on the boil while the potatoes steam tender.

The smallest amount of water possible, a lot of heat to bring it to a boil quickly, and even low boil quickly, and an evenly low heat to keep it boiling. That is the way to cook potatoes and keep a goodly proportion of their vitamins and minerals inside.

Not all of them. Some are bound to soak out in the cooking water in spite of you. But it's easy enough to get around that. There will only be one or two tablespoonfuls left. Mash it right up with the potatoes. Add it to a cream sauce; pour it over potatoes sliced to fry. Get it eaten somehow. It is good food.

Now that they are cooked, they must get to the table looking as good as they are. If you'll dump them in the bowl of your mixer and mash them up fine ; if you will add a little hot milk, season them, well, and beat them as light as a cloud; if you'll turn them into a hot covered dish, dabbing a chunk of yellow butter on top, and sprinkling it round with a drift of minced green parsley; if you'll do all that, and in less time that takes to tell it, so the potatoes will reach the table piping hot,—if

you will, I say, even the grimmest old calorie counter will be apt to swoon at the sight, and send back her plate for 'just the tiniest bit more, —please!'

Are your beets wallflowers? If they are I'll let you into a secret for serving these somewhat difficult vegetables that tempts their most hardened enemies into trying them again. In fact, I've never served beets this way without having my guests scrape their plates clean and look back wistfully when the very last splinter had gone from the serving dish.

Chop one pint of cooked beets. Heat two tablespoons of salad oil and add to it one tablespoon of flour and three tablespoons of vinegar, stirring until it begins to thicken. Stir in the beets and two tablespoons of sugar. Keep this in a dish over hot water until pust before you are ready to serve it, then add half a cup of thick sour cream. Be on the watch so it does not boil after you put in the cream. These beets look extra inviting surrounded by a ring of spinach, baby limas, or string beans.

Then here is a very simple pudding for everyday desserts. You can make it on the top of your stove. Mix a cup of light brown sugar, three tablespoons of cornstarch, two squares of chocolate, and two cups of milk in a heavy pan. Turn the switch to low and stir it now and again until it begins to steam, then stay right there stirring vigorously while the pudding gets thick. Add a teaspoon of vanilla and half a cup of chopped nuts and dates. Pour it into serving dishes, chill it and serve it with a dab of whipped cream.

UM-um!

Eat the Right Food

This government endorsed diet is reproduced from a pamphlet "Eat the Right Food" issued by Bureau of Home Economics, United States Department of Agriculture, with the cooperation of Children's Bureau, Office of Education, Public Health Service.

Try to Include in Your Meals Every Day

1. Milk.

For a growing child, ¾ to 1 qt. For an expectant or nursing mother 1 qt. For other family members 1 pint or more.

Use fluid, whole, or skim milk, buttermilk, evaporated milk, dry milk, cheese—on the table and in cooking. Count 1 pint of undiluted evaporated milk (a little more than 1 tall can), or ¼ pound of dry milk, or ⅓ pound of cheese as having about the same food value as 1 quart of fluid milk.

2. Leafy, green or yellow vegetables, 1 or more servings.

Tomatoes, oranges, grapefruit, green cabbage, raw salad greens, 1 or more servings. Other vegetables or fruit, 2 or more servings.

Use leafy green vegetables often—spinach, kale, chard, collards, mustard greens, cabbage, broccoli, beet or turnip tops, or wild greens such as dandelion, lambs quarters, dock, cress, purslane. Save vitamins and minerals in all vegetables by not cooking any longer or in more water than necessary. Use the cooking water or juices. Do not use soda in cooking vegetables. Potatoes and apples, available everywhere the year round, contribute important food value when abundantly used.

3. Eggs. 1 (or at least 3 or 4 a week).

Eat eggs poached, scrambled, fried, or cooked in the shell—and count the eggs used in custards and sauces and in baking.

4. Lean meat, poultry, fish, 1 or more servings.

Choose different kinds of meats, fish, poultry for variety of food val-

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Planning the Bathroom

(November Contest Winner)

Having spent about fifteen years planning the dream house I was going to build I was a "little" disappointed when we bought a farm home, that not only was dilapidated and run down but which didn't even have a bathroom. But after a few days planning I began to see possibilities.

This house did have three bedrooms, all in a row, so we took the middle one, sliced off the west end and put closets in each bed room, then built in the entire west side with cabinets, centering them around the lavatory in the middle. Over the lavatory we put a mirrored cabinet and on each side used a 40 watt lumiline lamp. We put in double sockets on each side, for a razor, heater, fan or what have you.

Our ceiling fixture is just an ordinary small enclosing bowl with a 150 watt lamp in it, and we painted the ceiling a flat white for we were told that had the best reflecting quality. We put tile on the floor and up about half-way on the wall, putting a small heater in the wall. The bath tub is the built in kind with a shower, and a pedestal type lavatory and noiseless stool completed our bathroom fixtures.

We took out two regular size windows and put in two smaller ones over the tub in the east, and over these I put rubberized curtains to match the shower curtains, which were blue with white fish on them.

We have plenty of hot water day and night from our big electric water heater (it has two elements too, for by putting in a time switch we can heat our water on an off peak rate much cheaper and we have a big enough storage tank that all of our water is heated on it).

DOROTHY VAN EATON ROGERS
Carnegie, Oklahoma

ues and flavor. Occasionally, use liver, kidney, and such salt-water fish as salmon, herring and mackerel. In economical diets use dried beans or peas as the main dish several times a week.

5. Cereals and bread, at least 2 servings of whole grain products or enriched bread.

Use whole grain bread or cereals —such as dark rye or whole wheat bread, rolled oats, cracked wheat, whole ground corn meal—or enriched flour and bread. Count spaghetti, macaroni, noodles, grits, and white rice as cereals, not as vegetables.

6. Fats.

Count salt pork, fatback, and bacon as fat, not as meat. Use butter or other vitamin rich fat every day.

7. Sweets.

Use sweets in moderation to make the diet palatable, but not enough to spoil the appetite for other foods. Count very sweet desserts, molasses, syrups, honey, jellies, jams, sugars, and candies as sweets.

8. Water, 6 or more glasses.

Form a regular water-drinking habit and drink plenty of water, especially in summer. When perspiration is excessive, use an abundance of water and extra salt.

Frozen Meat

When you bring a package of frozen meat home from the storage locker, it needs to be kept very cold until you are ready to use it. The freezing trays of your refrigerator are cold enough for it, but the food chamber is not. It will begin to thaw there. And as soon as it

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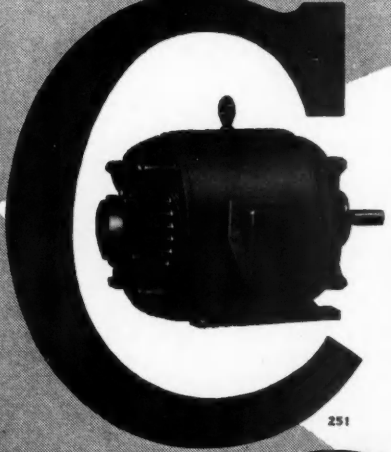

● Century high torque RS Motors are more important than ever right now when many rural areas are faced with a shortage of labor due to the demands of war. They'll perform those hard jobs faster, easier, and with better results.

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February Contest 1942

In these sober days when we are all trying to do just a little more than we usually think we can, when we are trying to give a little more time to those extra jobs that need doing for the world outside the walls of our home and beyond the line fences of the farm, we have to manage things just a little bit better in our daily routine.

I don't know how you feel about it, but one thing that annoys me beyond all bearing is having to spend time fruitlessly hunting for something I need. To avoid practically bursting with rage, I manage to keep most things in the same place day after day. It doesn't work with my reading glasses, but it does with the cord for the iron, the top of the coffee maker, and the vacuum cleaner.

How have you managed about *storing the electric equipment* that has come into your home these last few years? In the contest letter this month, we would like to have you tell us where you keep things like the iron, your mixer, toaster, waffle iron or the roaster oven, any of the things that help you in your work.

If you aren't entirely satisfied with the way things are now, you might add a paragraph about where you would like to keep them if you could make over your kitchen to suit your new needs.

Your letters should reach me, Gail Meredith, 700 S. Mills St., Madison, Wis., by February 28.

We will pay the writer of the winning letter five dollars.

---

thaws, it should be cooked. This is a must for those of us who use frozen meats.

The reason is simple. The meat spoils more easily after it has been frozen and thawed. If you care why that is, I can tell you what the food specialists say: the surface is moist and molds easily. The defensive agencies in the meat itself that held off spoilage are impaired by freezing, and third, there actually have been changes going on in the meat very, very slowly while it was frozen. All of these make it an easier prey to bacterial attack.

If you want to skip that last paragraph, just remember to keep it frozen or to thaw it and use it; one or the other. Don't try to stay on both sides of the fence at once.

There are three ways of thawing the meat out. You can thaw it slowly right on the shelves of your refrigerator. This, Dr. Tressler reports in the New York State Agricultural Experiment Station Bulletin FREEZING AND STORAGE OF FOODS IN FREEZING CABINETS AND LOCKER PLANTS, will take from five to ten hours for small pieces, one to two pounds, and twenty-four to thirty-six hours for a four pound piece. It will thaw more quickly if you put it out on the kitchen table. But even in a 70 degree kitchen, Dr. Tressler says it will take about two hours for a pound of meat. He suggests that you can cut down this time to approximately 45 minutes a pound if you want to set an electric fan to blowing the warm kitchen air over the package of meat.

The third way is to thaw it right

You can cook frozen meat any way you could cook it before it was frozen

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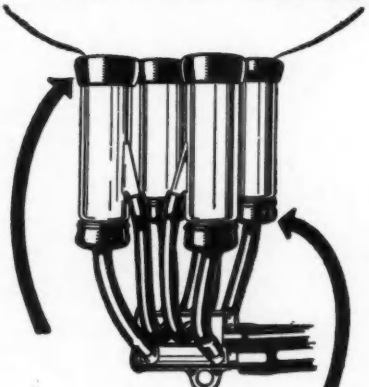

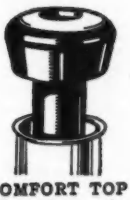

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SANI-CAP BOTTOM

The Sani-Cap Milk Tube is a combination milk tube and teat-cup bottom which snaps over bottom of shell. It is easy to attach and remove and makes cleaning easier at this vital point.

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in the pan you cook it in, on the top of the stove or in the oven.

And so far as anybody has been able to find to date, there seems to be practically no difference in the flavor of roasts thawed one way or another.

When it comes to planning the cooking, remember that you can cook the meat any way you could cook it before it was frozen. The only precaution you need to take is in allowing extra time, 15 to 20 minutes more a pound when you cook it without thawing. For the best roasting results, keep a moderate oven temperature.

Make It Last Longer

They won't be making so many irons this year as they made last. Metals must go into tanks and planes and guns instead of household tools. It will take less material to repair an iron than it will to replace it, so, as long as materials for repairs are available, have your old iron fixed up if you can, and leave the new electric irons for homes that have had none before.

It is up to all of us to keep the irons we have in good condition, and insure them longer life by extra care.

Some "Care" Pointers

First of all, keep the electric iron clean. When you've finished using it, let it cool then wipe it off with a damp cloth before you put it away. If you find little brown patches of starch burned onto it, wash it with soap suds and scour it very, very gently with a fine cleanser or fine steel wool, being careful not to scratch the smooth surface. Then wipe the sole plate again with a clean damp cloth.

Watch where you are ironing and go around rather than over buttons and hooks, zippers or any other hard material.

Be careful about dropping the iron. And never, never try to cool it by putting it in water.

Have an eye out for the bolts and nuts on the handle and tighten them if they work loose.

Even if you have an automatic iron and the temperature will stay where you put it, getting no hotter no matter how long the current is on, it is a good idea to form the habit of disconnecting the iron when you go to answer the telephone.

Then just as a safety measure be sure it is thoroughly cold before you put it away.

This is a war we all must fight. No slightest saving we can make is insignificant today.

Bacteria Killed by Sound Waves

A new short wave sound generator that kills bacteria and other microorganisms has been developed by Prof. A. P. Krueger of the University of California at Berkeley. The device consists of a nickel tube within a magnetic field, activated by electrical impulses. The tube is first elongated, then contracted by the alternate pulls of the magnets. So rapid is this oscillating motion that the nickel tube emits sound waves with a high frequency of 9,300 cycles a second. Staphylococci, the bacteria that cause boils and carbuncles, were all killed by this penetrating sound. Bacteriophage, a virus disease of bacteria, was also destroyed, and the cellular secretion from which bacteriophage is formed was made permanently inert.

Tractor Lights

During the rush season it is frequently desirable to operate farm tractors on night shifts. Although many of the newer tractors are fitted with a self-starter, battery and generator, making the addition of lights a simple matter, older tractors are not so equipped. These can, however, readily be fitted with night lights at low cost. Two methods are suggested. One is to attach a battery to the tractor frame in a suitable box and connect it to automobile salvaged headlights; one directed toward the front at the right side of the tractor and one turned backward to illuminate the drawn equipment. Lamp attachments should be adjustable. Thirty-two watt bulbs are recommended. This method requires separate charging of the battery. Or a complete system can be had by using a rebuilt or secondhand automoble generator connecting it by means of a V belt on the generator to the flat pulley of the tractor power drive. Pulley sizes should be chosen to give approximately 2000 revolutions per minute for the generator. A battery is desirable with the system to act as buffer between generator and lamps. All connections in a tractor lighting system should be well spliced and soldered to prevent breaks and possible burning out of the generator coils. An ammeter in the line is desirable as a check on charge and discharge rates, but it is not essential. An extra trouble lamp on a long extension cord is particularly handy in connection with night operation.

W. C. Krueger, New Jersey Extension Service.

By JEROME J. HENRY

From Coop to Fiddle

Gold is where you find it, and so is wood for violins.

So says Tony Wons of radio "Scrapbook" fame, who also dabbles in the construction of violins.

"The best piece of fiddle maple I ever found was a chunk of ancient table top that a neighbor was using as a stop-gap in his chicken coop," Wons explained.

Conductors from Many Lands

The conductors who are leading the NBC Symphony Orchestra this season represent a background as international as the music they direct.

Dimitri Mitropoulos is a Greek who studied in Germany.

Efrem Kurtz, Russian born, conducted the orchestra for Pavlowa's ballet in Europe, Africa, South America, and Australia. Later he joined the Ballet Russe de Monte Cristo.

Versatile, lovely Kaye Brinker can play any character in a radio drama. One day she is a gangster's moll; the next the innocent victim of a swindle on one of the popular "sleuth" programs.

Juan Jose Castro, great Argentinian composer-conductor, studied in Paris.

Sir Ernest MacMillan, a native of Ontario, Canada, studied in Scotland, England, and Germany.

George Szell, a Czechoslovakian, conducted concerts in Europe and the British Isles.

Leopold Stokowski, born in Lon-

don, came to the United States at the age of 18.

Fritz Reiner, born in Hungary, has conducted in Budapest, Berlin, Vienna, Rome, Barcelona, and other leading cities of Europe.

Dean Dixon, young Negro conductor, is a product of Harlem, New York.

Frank Black, general music director of NBC, is a Pennsylvanian.

Alfred Wallenstein, born in Chicago, has served as guest conductor of leading American Orchestras.

Saul Caston was born in New York City.

The conductors are now permanently associated with orchestras in the leading cities of the Western Hemisphere. Mitropoulos conducts the Minneapolis Symphony. Castro is maestro at the Teatro Colon in Buenos Aires. MacMillan leads the Toronto Symphony, Reiner leads the Pittsburgh Symphony, and Caston is the conductor of the Philadelphia Orchestra.

The youngest of the eleven maestri is Dixon, who is 26 years old. Stowkowski, at 59 is the dean of the group. The average age of the conductors is 44 years.

She Simply Sits..and Watches

An extra girl has been added to Phil Spitalny's all-girl orchestra as it makes tours of army camps.

She neither sings, nor plays an instrument. She is a representative of the insurance company that underwrites protection of the half-million dollars' worth of violins owned by the band. She is on hand to prevent damage to the instruments should the pretty musicians be mobbed by enthusiastic soldier fans.

Nothing But the Truth

Directing a radio program is simply fun to Himan Brown, who has directed some of the networks' best, including "Adventures of the Thin Man." The first two or three "readings" of a script closely resemble riots.

Recently a new sound effects man was assigned to Brown's unit. He became hopelessly confused by goings-on in the studio.

"Look, Mr. Brown," he protested, "Are you in the cast or am I crazy?"

"I always have been—it has become—you soon will be," grinned the director in reply.

Do You Need a Coo? A Gurgle?

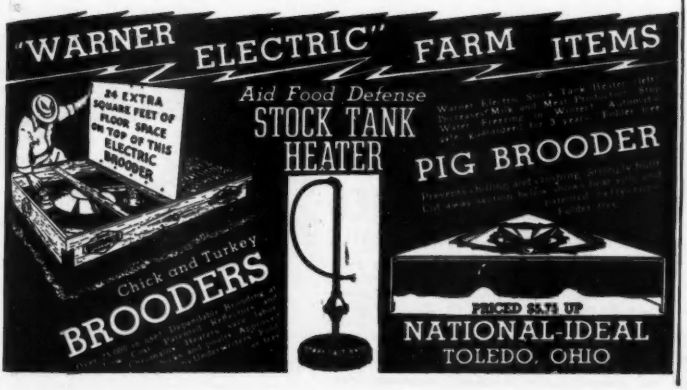
Recently there was a dearth of babies' gurgles, coos, and sobs on the airwaves. Why? Because Miss Madeleine Pierce was undergoing an appendectomy.

Miss Pierce and babies-on-the-air are practically synonymous. For nine years she has been impersonating children's roles, ranging from the whimperings of day-old infants to the lusty shouts of 14-year-old youngsters.

Expert imitators of children are not common phenomena, even around a radio station which can produce mimickers of sounds varying from a barnyard chorus to a stormy night at sea—usually at a minute's notice. So writers of the scripts on which Miss Pierce customarily emits her baby sounds were forced to take drastic steps.

All but one of Miss Pierce's parts were "written out." The characters she imitated either went on vacation, developed laryngitis and couldn't talk for a while, decided to remain silent anyhow, or otherwise removed themselves from the air.

Miss Pierce has never attempted other radio roles than those of children. When she first auditioned for a child's part, the field was narrow. But radio has since developed its



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own child actors with whom Miss Pierce frequently competes. Her voice sounds more genuinely childish to program directors than those of most children.

She can imitate most children's voices with ease, although she admits that impersonations of a very young baby in a tantrum requires a lot of effort. She practices at home to excercise her vocal chords for that sort of thing. She mimics a boy's voice as well as a girl's, and says they differ little in tone inflection.

Autograph: 1942 Style

Here's a new wrinkle in autograph collecting, and you can credit Meredith Willson, conductor of the "Maxwell House Coffee Time" program for it.

The maestro directed the music for a film in which Bette Davis, one of the first ladies of the screen, appeared. When the picture was completed Miss Davis asked Mr. Willson for an autographed album of his American classics. Instead of signing the discs, Willson had new records made, using his own voice in an introductory: "Dear Bette, this is Meredith. I hope you like them."

Barn Protection

The sensible rule against smoking in the barn should be observed by even the owner himself.

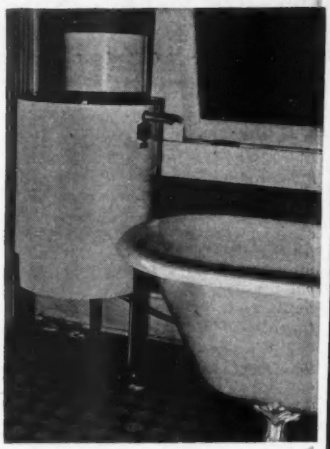
Hay, if stored before being well cured, is liable to ignite spontaneously. Soy beans are especially dangerous, and should never be stored in the barn until the pods have been removed.

Threshing machines should not be operated in or near the barn. No automobile or tractor should ever be driven onto a barn floor on which there is hay or trash.

Lanterns should be carried or hung in the barn—never left on the floor.

For Hot Baths

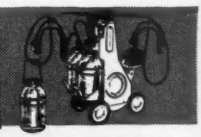
Where running water is not available in the bathroom but where electric rates are low, the arrangement



An inexpensive ten gallon Automatic Electric Water Heater for bathroom or other use.

shown in this illustration may provide a lot of comfort and less dread of taking baths than where such provision for hot water is not available. This a ten gallon dairy water heater. Cold water is poured into the small "funnel tank" on top until the large tank is full. The electricity is then turned on. When the water is heated to a predetermined temperature, a thermostat cuts off the current. Thereafter when one wants a gallon or a bucket of hot water he pours a gallon or bucket of cold water into the top tank, and the hot water comes out of the spout. The tanks are insulated to minimize heat losses. They are relatively inexpensive. They may be used in bath room, kitchen or dairy.

Get this HIRED HAND!



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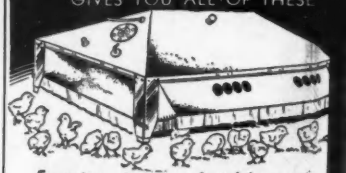

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Questions and Answers

Sterilizing Milk Utensils

▶**Question:** *We have a water pressure system in our home with forty pounds pressure and this is piped to the barn and milk room. I would like to install an electric water heater in my milk room and have it so fixed that I can sterilize milk pails, milk cans, pails, etc., by turning the pails upside down and spraying them with hot water similar to the way they sterilize milk cans in a creamery or condensory. Where can I get a connection or device that I can attach to the hot water pressure and get the desired results?*

P. W., Ind.

▶**Answer:** Nozzles made especially for spraying dairy utensils may be obtained from the Creamery Package Mfg. Company, Chicago, Illinois, or Cherry-Burrell Corporation, Chicago. You might improvise a satisfactory nozzle from an orchard or farm crop spraying outfit.

Rinsing of milk cans is done with water in creameries but I am quite sure that most creameries use live steam for sterilization. While I do not have actual cost figures to give you, it is my opinion that it would be costly to attempt to sterilize utensils such as milk cans by spraying them with electrically heated water.

To effectively sterilize milk cans, one must actually heat the metal to about 180°. This would take con-

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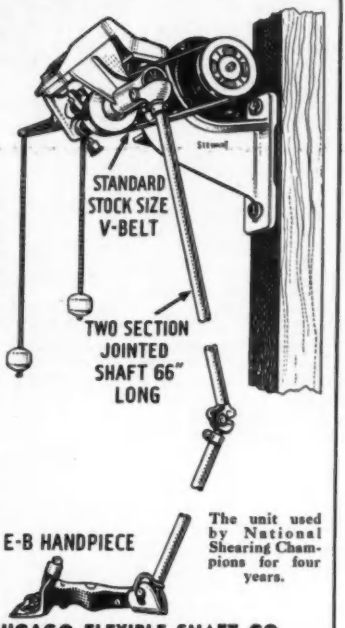

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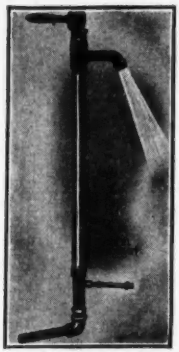

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JOSEPH A. VOGEL COMPANY, Wilmington, Delaware

siderable time and water and you would be wasting large quantities of only partially cooled water. Unless you get the utensils hot enough to actually kill the bacteria and dry the can your spraying the can with hot water will be practically useless from the standpoint of sterilization as bacteria increase rapidly in a warm moist place such as the can would be. I would recommend immersing the utensils in hot water.

Mushroom Growing

▶**Question:** *Some two years ago you gave a description how to use electric wire heaters for the raising of mushrooms. We are very much interested to have all data on that subject.* J. B., Cal.

▶**Answer:** We have published no article on mushroom growing since the one in our May issue 1939. To refresh your memory, a copy of that article is enclosed. About fifteen years ago some work was done in the Pennsylvania mushroom growing area on using electric heat in mushroom houses. I have never been able to get a report on the results and the practice has since been discontinued. About twelve years ago when I was directing the National Rural Electric Project near Washington, D. C., we conducted some research work on using electric heat in growing mushrooms in hotbeds during the winter months. The results of those studies were not published but I can give you a few highlights. It was best to place the heating cable about six inches down in the compost. The higher temperature up to 80° produced fast growth and many mushrooms but they had longer stems and were softer and of inferior quality. The lower temperature produced firmer short stemmed mushrooms. The higher temperatures were, of course, very effective in getting the growth started. It was very necessary to keep the beds watered each day and keep them closed tight so as not to permit the compost to dry out. So far as I know, electric heating is not being used commercially.

Underground vs. Overhead Wires

▶**Question:** *Is an underground lead covered cable all right for long service to run a motor or do you suggest overhead wires better? The distance is about 200 feet. How deep should wire be in the ground?* W. L. S., Ill.

▶**Answer:** Unless you wish to keep the wires out of sight or there are trees of other obstructions in the way, I would suggest overhead wires to serve your motor. Underground cables should give you equal-

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MODERNIZE ELECTRICALLY! Complete poultry farm supplies; Infra-Red Ray Brooders, Thermostats, 150 items. *Free 52 page Catalog.* Parts & Plans for building your own brooder. Write today! LYON ELECTRIC COMPANY, Dept. EF, Greensboro, N. C., or San Diego, California.

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ly good satisfaction and life if properly installed. Cover the cable enough so it will not be injured by driving over it or digging into the soil. Placing it in small drain tile or covering it with something to protect it from mechanical injury is desirable. Keep the lead covering away from cinders as the alkali in some cinders eats away the lead sheath.

Electrifying a Hot Water Incubator

▶**Question:** *I would like to convert my hot water heated 500 egg incubator into an electric heated one. What size heating unit would be required to heat it to 100°F to 102°F. The inside dimensions are 48 x 34 x 10 inches with 4½ inches clearance above the eggs. It has three trays.* C. R., Iowa.

▶**Answer:** My guess is it would take about 350 watts to heat your 500 egg incubator. It would depend somewhat on the construction and insulation of the machine and where it is used. I would suggest that you write to the Lyon Rural Electric Company, San Diego, California, giving them the name and description of your incubator and getting their recommendation for electrifying it. They have a bulletin on the subject of Electrifying Fuel Burning Incubators which they sell at 15c.

Sawdust Over Wire Safe?

▶**Question:** *We plan on putting sawdust on attic floor for insulation. Is it safe to cover electric wires with sawdust?*

▶**Answer:** The National Electrical Code states in Paragraph 3249, "If thermal insulation is used in the hollow spaces of walls and ceilings in which concealed knob-and-tube work is installed, only approved non-corrosive, non-combustible, non-conducting thermal insulation materials shall be used, and these shall be applied in a manner not liable to place a strain upon the conductors or supports."

Paragraph 3370 makes a similar statement regarding buildings wired with non-metallic sheathed cable. If the house is wired in metallic sheathed cable or conduit, these requirements do not apply and it is assumed to be safe to use such metal coverings in contact with wood surfaces.

Kentucky Proves Electric Brooding

. . . . . (Here from page 7)

tion with or enthusiasm for the electric type of brooder. In giving reasons for satisfaction the points most frequently mentioned were 'economy of time and labor,' 'elimination of fire hazard,' 'chicks grew and feathered better,' and 'lower mortality.' Practically all of the users had had one or more years of previous experience in artificial brooding with some type of heater other than an electric brooder."

Salt Stops Cannibalism

Experience has shown that there is a definite need for salt in the body processes of all animals. If salt is not given, productive capacity, growth and health will suffer. A deficiency of salt may also be responsible for cannibalism in chickens and hogs. When cannibalism is observed in a flock, it can sometimes be stopped by adding two per cent of additional salt to the ration for a few days. The same treatment for sows may save the young pigs. Discontinue the excess salt as soon as picking or cannibalism stops. High levels of salt fed continuously will not prevent cannibalism.

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Help Defense *— and help yourself to some cash. Cash prizes will be given for your ideas and experience on the use of electricity for repair and maintenance on your farm.*

HOW ELECTRICITY HELPS REPAIR AND MAINTENANCE CONTEST

THE WINNERS

in December Contest for best statements on "How Electricity Helps to Boost Production on the Farm"

FIRST PRIZE—$20 Cash

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R.F.D. 1. Walden,
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SECOND PRIZE—$5 Cash

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Six $3 Prizes

MR. K. M. WEBB,
Allisonie,
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MR. PAUL J. HOOK,
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R.F.D. 2, Formoso,
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MRS. JOHN C. JONES
Myrtle Creek,
Douglas County, Ore.

MRS. VERNON D. GELABERT,
R.F.D. 1, Louisburg,
Miami County, Kans.

You will find their letters printed in this issue on page 8.

Eight $1 Prizes

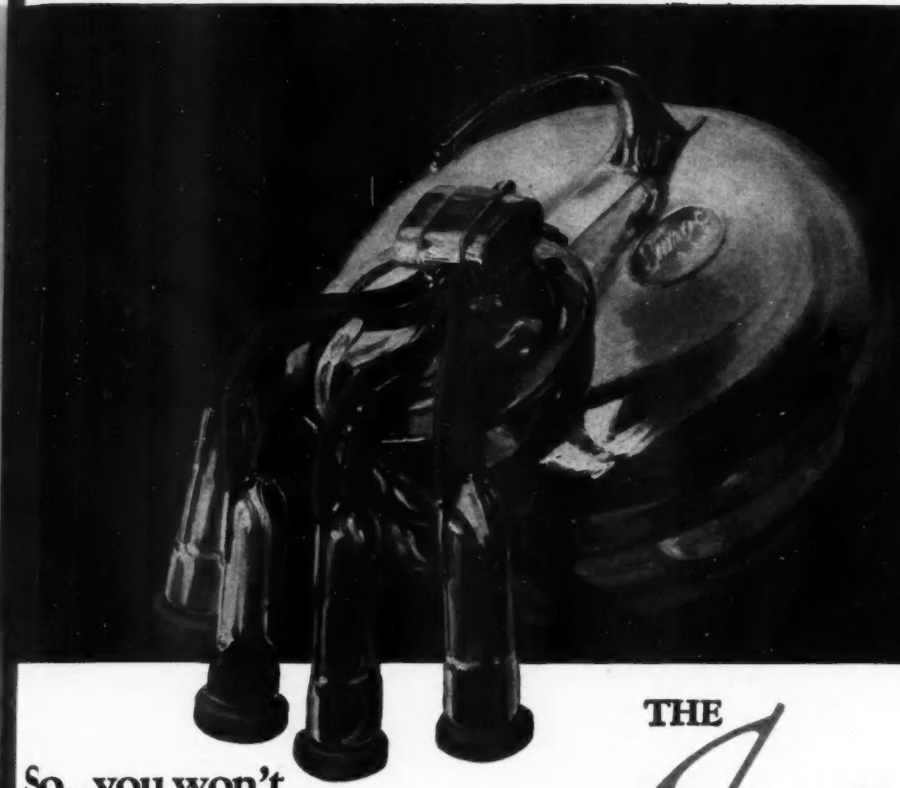
Mr. Sylvester Nackers, R. 2, Kaukauna, Wis.
Mrs. George Klein, R.F.D. 2, Vincennes, Ind.
Mrs. V. W. Tidwell, R. 2, Palouse, Wash.
Mrs. Howard F. Capwell, Elmwood, Nebr.
Mrs. Noah Greiner, R.F.D. 2, Manheim, Pa.
Mr. Ray Clark, R.F.D. 1, Coffeyville, Kans.
Mr. Robert H. Brown, R. 2, Hopkins, Minn.
Mr. Albert Cook, R.F.D. 1, Marshall, Mich.
These letters will be printed in subsequent issues.

RULES FOR REPAIR AND MAINTENANCE CONTEST

- Cash prizes will be awarded for the best letters or statements on how electricity helps repair and maintenance on your farm.
- Letters need not be lengthy — the shorter the better. Facts and figures are more important than literary style or form of presentation.
- There will be one first prize of $20.00 cash, one second prize of $5.00 cash, and five prizes of $3.00 cash.
- We will also pay $1.00 for any other entries we use. In addition we will pay $1.00 to $3.00 for any photos we can use.
- In case of a tie each winning contestant will receive the full cash prize to which he or she is entitled.
- All members of the farm family to whom this magazine was sent may enter, but each contestant may submit only one statement.
- The decision of the judges is final and all entries become the property of this magazine.
- Winning names and entries will be announced in the April 1942 issue.
- Send your entry on a plain piece of paper, letterhead or government postcard.
- Entries should be sent to the Defense Production Contest Editor, ELECTRICITY ON THE FARM, 24 W. 40th St., New York, and must be postmarked before March 1.

Every Four Minutes

of our working day a shining, bright, new Surge Milker comes off the "line"



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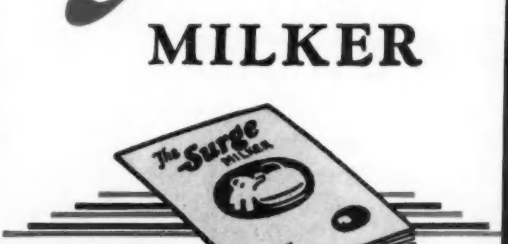

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For example, if you use electricity skillfully for production purposes it will lighten your labors, speed up farm tasks, put extra cash in your pocket book. That's what it's doing for thousands of other farmers in all sections of the country and it can do the same for you.

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These and many others that you'll find described in this magazine will enable you to GIVE much needed produce and livestock to the supply of foods required to win the war and at the same time increase your TAKE and put your farm on a better paying basis.

ASK YOUR ELECTRIC COMPANY

or your electrical equipment dealer if you need further information. Or, if you prefer, address your inquiries to ELECTRICITY ON THE FARM, 24 West 40th Street, New York, or 6 No. Michigan Avenue, Chicago.

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